

REMARKS

In accordance with the foregoing, the specification is amended to improve form and provide improved correlation with the drawings and claims. Claim 13 is amended. Claims 1 – 3, 8 – 10, 13 and 14 are pending and under consideration and claims 4 – 7, 11 and 12 are withdrawn from consideration. No new matter is presented in this Amendment.

Amendments to the specification

The specification is amended at paragraphs [0023], [0039] and [0046] to correct informalities noted by the Examiner at page 3 of the Office Action.

Rejection of claim 13 under 35 U.S.C. §112

At page 4 of the Office Action, claim 13 was rejected under 35 U.S.C. §112, second paragraph, as allegedly being indefinite for identifying a material by a trademark (TEFLON). While the Applicants do not agree with this rejection (noting, for example, that the term “Teflon” is used in the claims of 2915 U.S. patents), nevertheless, claim 13 is amended to replace the term “Teflon” with the term “polytetrafluoroethylene”. Therefore, the rejection should be withdrawn.

Rejection of claims 1 – 3, 8 – 10 and 13 under 35 U.S.C. §103 over Inoue et al.

At page 4 of the Office Action, claims 1 - 3, 8 - 10, and 13 were rejected under 35 U.S.C. §103(a) over Inoue et al. (U.S. Patent 5,707,756). The Examiner alleged that Inoue et al. disclose a cathode active material comprising a lithium transition metal composite oxide in which a carbon compound is adsorbed, referring to Col. 15, line 63 to col. 17, line 30 of Inoue et al. The Examiner alleged that the lithium transition metal composite of Inoue et al is the same as that of the present application and that it is manufactured in a similar fashion and that therefore, it would provide a carbon content of 10 to 1,000 ppm. The Examiner further alleged that Inoue et al. discloses mixing and calcining a lithium compound and a transition metal compound at 250 to 2000 °C in an oxidizing atmosphere such as O₂ and CO₂. The Examiner further alleges that Inoue et al discloses that the carbon compound has a specific surface area in the range of 0.01 to 50 m²/g. For the following reasons, this rejection is respectfully traversed and reconsideration is requested.

Independent claim 1 relates to a cathode active material comprising a lithium transition metal composite oxide in which a carbon compound is adsorbed to obtain a carbon content of

10-1,000 ppm. Independent claim 8 relates to a lithium battery that, among other limitations, comprises a cathode comprising a cathode active material that comprises a lithium transition metal composite oxide in which a carbon compound is adsorbed to obtain a carbon content of 10-1,000 ppm.

Contrary to what is alleged by the Examiner, Inoue et al. does not teach or suggest any cathode active material comprising a lithium transition metal composite oxide in which a carbon compound is adsorbed. In particular, although cathode active material comprising a positive lithium transition metal composite oxide is extensively discussed at Col. 15, line 63 to col. 17, line 30 of Inoue et al, there is absolutely no mention of a carbon compound adsorbed on the oxide. Moreover, contrary to what is alleged by the Examiner, Inoue et al. does not explicitly describe any preparation method that would obviously provide a carbon content of 10 to 1,000 ppm. Inoue et al. describes that a lithium compound and transition metal compound are calcined at temperatures of 250 to 2000 °C, and states at col. 17, lines 21 – 26 that the calcining atmosphere is not particularly limited. Although carbon dioxide is mentioned in the paragraph regarding the calcining atmosphere, there is no description that teaches or suggests supplying carbon dioxide under conditions to cause a carbon compound to be adsorbed on the lithium transition metal composite oxide. As evidence that adsorbed carbon is not contemplated in Inoue et al., it may be noted that Inoue et al. at col. 17, line 48 to col. 18 line 2 extensively discusses the surface characteristics of its positive active material, and no mention is made of adsorbed carbon.

Regarding claims 3 and 10, the Examiner is in error in alleging that Inoue et al. describes that the carbon compound has a specific surface area of 10 – 5,000 m²/g, since, as noted above, Inoue et al. does not describe a carbon compound adsorbed on its oxide material at all. The specific surface area range of 0.01 to 50 m²/g mentioned at col. 17, line 35 – 37 of Inoue et al. relates to the surface area of the oxide material.

Therefore, the rejection should be withdrawn.

Rejection of claim 14 under 35 U.S.C. §103 over Inoue et al. in view of Park et al.

At page 6 of the Office Action, claim 14 was rejected under 35 U.S.C. §103(a) over Inoue et al. (U.S. Patent 5,707,756) in view of Park et al. (U.S. Patent No. 6,692,873) (referred to by the Examiner throughout the Office Action as “Parker et al.”). The Examiner acknowledged that Inoue et al. does not describe a vinylidene fluoride-hexafluoropropylene copolymer having 8 – 25% by weight of hexafluoropropylene, but alleged that this material is described in Parker et al. The Examiner took the position that it would have been obvious to have modified the binder of

Inoue et al. by incorporating the binder, on the alleged grounds that Park et al. teaches that the binder would have formed uniform pores in the electrodes and separator and provided excellent porosity characteristics and excellent adhesion between the separator and electrodes, thereby providing a battery having excellent lifetime characteristics, high performance and low temperature characteristics. For the following reasons, this rejection is respectfully traversed and reconsideration is requested.

Park et al. does not overcome the failure of Inoue et al. to teach or suggest a cathode active material comprising a lithium transition metal composite oxide in which a carbon compound is adsorbed to obtain a carbon content of 10-1,000 ppm. As discussed above, Inoue et al. does not teach or suggest a carbon compound adsorbed on its positive active oxide material. Likewise, Park et al. contains no such description. Therefore, Inoue et al. and Park et al., singly or combined, do not teach or suggest the limitations of independent claim 9, from which claim 14 depends.

Therefore, the rejection should be withdrawn.

CONCLUSION:

There being no further outstanding objections or rejections, it is submitted that the application is in condition for allowance. An early action to that effect is courteously solicited.

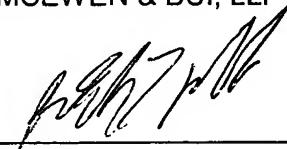
Finally, if there are any formal matters remaining after this response, the Examiner is requested to telephone the undersigned to attend to these matters.

If there are any additional fees associated with filing of this Amendment, please charge the same to our Deposit Account No. 503333.

Respectfully submitted,

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